



County of Yolo

BOARD OF SUPERVISORS

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September 27, 2005

Robert Schneider, Chairman
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive, #200
Rancho Cordova CA 95670

SUBJECT: Cache Creek, Bear Creek, and Harley Gulch TMDL for Mercury

Dear Chairman Schneider:

The Yolo County Board of Supervisors (Board) would like once again to express concern regarding the development of the Cache Creek, Bear Creek, and Harley Gulch Total Maximum Daily Load (TMDL) for mercury. We appreciated the RWQCB's decision to extend the public comment period and allow RWQCB staff more time to address the concerns of RWQCB members and members of the public expressed at the June 23, 2005 hearing. As a result of the RWQCB's direction to staff, the TMDL has improved. Nevertheless, we continue to have significant concerns with the impact of the TMDL - including new requirements proposed since the June 23, 2005 hearing - on important Yolo County activities.

As you are well aware, Yolo County shares a desire with the RWQCB to reduce the risk to human health and wildlife caused by the accumulation of methylmercury in fish tissue. We still believe, however, that the TMDL requires onerous and expensive monitoring and potential remediation activities that will not achieve the intended reduction in mercury levels. We urge the RWQCB to accept the specific changes outlined in our attached comments to minimize the impact on the activities of local entities that are not responsible for the presence of mercury in Cache Creek. In addition, we urge the RWQCB to partner with Yolo County to collect additional information as necessary to ensure that the TMDL achieves the highest benefit at the lowest cost.

Thank you for your consideration of our concerns.

Sincerely,

Helen Thomson
Chairwoman, Yolo County Board of Supervisors

cc: Patrick Morris ✓
Janis Cooke

Enclosures: Yolo County Comments on Cache Creek TMDL

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RWQCB
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Yolo County Comments on Cache Creek Mercury TMDL language
Based on version released August 2005
September 27, 2005

Yolo County continues to have concerns with the potential impacts of the proposed Cache Creek mercury Total Maximum Daily Load (TMDL) on Yolo County's efforts to enhance habitat and provide recreational opportunities along Cache Creek. The August 2005 version addresses some of Yolo County's concerns identified during previous public comment periods, however. In particular, Yolo County appreciates the following changes:

Positive Changes

Exception to no net increase requirement. Possible exception (subject to the Executive Director's approval) to no net increase in methylmercury requirement for new reservoirs, ponds, and wetlands if dischargers provide information that demonstrates that reasonable management practices to limit discharges are being implemented and the projects are being developed for the primary purpose of enhancing fish and wildlife beneficial uses. We have some specific comments on this language, but generally agree in principle.

Relocating sediment within the channel. Yolo County appreciates the RWQCB's decision to allow lead agencies to relocate sediment removed from the channel within the channel if the project is related to habitat restoration or erosion control.

Elimination of 0.4 mg/kg requirement for lower watershed. Yolo County appreciates the RWQCB's decision to drop the requirement to impose additional controls on projects that disturb sediment over 0.4 mg/kg in the lower watershed.

Adaptive implementation language. We appreciate the RWQCB's open admission that there are uncertainties associated with the load estimates and the correlations between reductions in loads of mercury, subsequent methylmercury concentrations in the water, and accumulation in fish and wildlife. Yolo County looks forward to partnering with the RWQCB on studies that will help the RWQCB determine the most cost-effective control program for the watershed.

Natural erosion language. Yolo County appreciates the RWQCB's recognition that natural erosion is part of the solution, as stated on page I-5, "Natural erosion processes can be expected to slowly move the mercury downstream out of the watershed over the next several hundred years."

General Concerns

Yolo County continues to have the following general concerns, as well as the specific concerns outlined in the next section. Since efforts by the RWQCB have resulted in substantial revisions to the original TMDL, the August 2005 version allows the County to provide more focused comments. There was so much in the original TMDL of concern to Yolo County, we were not able to include as much information about the concerns in these additional areas as we might have. In addition, the turbidity monitoring requirement is new to the latest version of the TMDL. We have significant concerns with that requirement.

Comment #1: Costs. Yolo County continues to believe that the RWQCB has not accurately or thoroughly estimated the costs local entities will incur to comply with the TMDL. How much will feasibility studies cost? Turbidity monitoring? Implementation actions to undertake actions outlined in the feasibility studies?

Suggested revision: Undertake a more sophisticated analysis of the costs, including sensitivity analysis to account for uncertainty.

Comment #2: Lack of prioritization language. As expressed in earlier comment letters, Yolo County feels very strongly that the RWQCB should prioritize efforts to control the erosion of mercury-enriched sediment. The RWQCB should focus on areas with mercury-enriched sediment (e.g. over 10 ppm) and not regulate areas with low levels of mercury. The RWQCB has admitted that part of the solution to Cache Creek's mercury problem is to allow erosion to occur, so that the mercury eventually is trapped by the Cache Creek Settling Basin or washes out into the ocean. This is directly contrary to the focus of the TMDL, which is to control erosion. We believe that the RWQCB should eliminate this inconsistency by clearly defining an approach that focuses on areas with mercury-enriched sediment and does not regulate areas with low levels of mercury. The RWQCB states on page I-9 of the Amendments to the Basin Plan:

"At other sites, further studies are needed to determine whether feasibility studies to control sources of mercury and methylmercury should be required from the landowners. Staff will complete the assessments within one year of adoption of this amendment and feasibility studies will be required from responsible parties, where applicable. ...decisions about implementing remediation actions will be made by the Regional Water Board as part of the five year Basin Plan review cycle."

Nothing in this language indicates that the RWQCB will prioritize its request for feasibility studies and remediation actions on the basis of the level of mercury in sediment. Nothing in this language indicates that the RWQCB will not regulate areas with low levels of mercury in the sediment. While personal communication with RWQCB staff indicated that the RWQCB intends to prioritize feasibility studies and remediation actions, Yolo County believes it should be clearly stated in the Amendments to the Basin Plan.

Suggested revision: Clearly state in the Amendments to the Basin Plan that the RWQCB will prioritize its request for feasibility studies and remediation actions on the basis of the level of mercury in the sediment. As stated elsewhere in these comments, the RWQCB also should not require landowners to pay for feasibility studies and remediation actions designed to control sediment enriched in mercury because of historic mining activities and natural erosion.

Comment #3: Unrealistic water quality objectives. As detailed extensively in our June 8, 2005 comments, Yolo County believes that RWQCB has set unrealistic water quality objectives based on flawed assumptions about the diet of bald eagles in the Cache Creek watershed. After meeting with the RWQCB and the USFWS, Yolo County understands that the USFWS based its recommendation on the best information available about bald eagle diets. This information is, however, almost entirely based on studies of eagles leaving in non-canyon, lakeside habitat with abundant waterfowl – a very different environment than Cache Creek. Both the RWQCB and the USFWS said

that a study of the diets of bald eagles specific to the Cache Creek watershed would provide information useful to setting the water quality objectives.

Suggested revision: Work with Yolo County to design a study of the diets of bald eagles in the Cache Creek watershed. This study is noted in the staff report, but not in the Basin Plan Amendment. It should be mentioned in the section entitled, "Revised Chapter IV." Revise the Cache Creek mercury TMDL during the Delta TMDL process or the five-year review process to incorporate the new information.

Comment #4: Discussion of relative contribution of activities in and around the creek channel. The TMDL still assumes that current anthropogenic activities, well downstream of the mining region, are a significant contributor to the problem. As stated in earlier comments, Yolo County believes that most of the mercury in the channel is the result of mercury washing into the creek from the tailings of abandoned mines, not current anthropogenic activities. The RWQCB does not provide sufficient evidence that current anthropogenic activities significantly contribute to the problem.

Suggested revision: The RWQCB should demonstrate that current anthropogenic activities are significantly contributing to the problem before proposing onerous and expensive regulatory requirements. While we appreciate that the RWQCB is allowing the Cache Creek Resource Management Plan to operate without many changes, Yolo County activities in the upper watershed to develop our parks and restore habitat will be negatively affected by the TMDL requirements.

Comment #5: Regulation of downstream landowners not responsible for the mercury problem. Since the August 2005 staff report does not define natural conditions or the conditions that constitute a discharge of mercury (with the exception of releases from mines and associated wastes), the proposed TMDL apparently imposes regulations on property owners who are not responsible for mercury releases related to current anthropogenic activities. In other words, landowners downstream of abandoned mercury mines may be responsible for developing remediation plans, and undertaking remediation activities, for the deposition of mercury on their property from these mines and natural erosion.

Suggested revision: Pursue state and federal funding to develop remediation plans and pay for remediation activities for properties that are not responsible for the mercury deposition. Exempt landowners from the cost of paying for plans and remediation activities. Prioritize remediation of mercury-enriched sites.

Comment #6: Turbidity monitoring. The RWQCB requires turbidity monitoring for projects that may disturb sediment in Cache Creek, although it allows turbidity monitoring to cover the entire plan area for comprehensive resource management plans, such as the Cache Creek Resource Management Plan. Yolo County owns a number of parks and open space areas in the upper watershed that the County plans to improve over the next 10 years, as detailed in the draft 2005 Yolo County Parks and Open Space Master Plan, outside of the Cache Creek Resource Management Plan area. The expense of improving these parks and restoring habitat in our open space areas will increase significantly as a result of this requirement. Resources that would have been used for actual improvements will be diverted to monitoring. Yet, it is unclear that turbidity monitoring will provide any useful information based on past County experience

with turbidity monitoring efforts. In addition, the RWQCB has not provided evidence that these areas contain sediments with "elevated" levels of mercury.

Yolo County has proactively attempted to provide meaningful data on turbidity conditions within the Cache Creek Resource Management Plan area. We have monitored for turbidity since the adoption of the Plan. It is measured quarterly at four locations along the creek. As a result of this experience, Yolo County has tried to express to the RWQCB staff the difficulties associated with defining and evaluating significant changes in Cache Creek turbidity levels given the naturally high and variable levels of suspended sediment in the stream.

The County also has implemented a regional turbidity monitoring program within the Capay Valley and the Cache Creek Resource Management Plan area to provide a meaningful context (e.g. background turbidity) for evaluating the potential for significant changes in suspended sediment loads as a result of the implementation of projects along the creek. A September 2005 report on the results confirm that individual bank protection and habitat enhancement projects present a very low risk of significant sediment loading. Samples were collected during 15 sampling events at six sampling stations on Cache Creek and Gordon Slough. Nevertheless, the RWQCB inserted this new requirement into the August 2005 version of the TMDL. The September 2005 report suggests the following:

- **Natural variations of suspended sediment are large.** Variations in turbidity during the range of seasonal flow conditions at individual sampling sites are extreme (e.g. 2.0 NTU to over 2,000 NTU)
- **Turbidity levels during even moderate flow events exceed the range of turbidimeters.**
- **Turbidity highest at the most upstream sampling sites.** During individual sampling events, the turbidity level was highest at the Rumsey Bridge sampling site. While most streams tend to exhibit downstream decreases in turbidity, this is not the case for Cache Creek.
- **No measurable increase from projects.** An increase in turbidity through the area in which numerous small to large bank stabilization and habitat restoration projects are located was not indicated by the data.
- **Turbidity measurement at Gordon Slough much higher than turbidity levels in Cache Creek above its confluence with the slough.**

Several times in the last year, RWQCB staff has indicated that Caltrans has a model program for monitoring turbidity for streamway projects, yet staff have not provided us with information about this program or why it is a model. In addition, staff has said that they are only requiring turbidity monitoring in the TMDL because project proponents would have to meet the Basin Plan's turbidity objective, even if the TMDL did not exist. We believe that the turbidity objective in the Basin Plan is antiquated and not scientifically derived.

Suggested revision: In light of the turbidity studies conducted to date in the Capay Valley and Cache Creek Resource Management Plan area, the use of the turbidity monitoring objective as a measure of compliance with the TMDL is considered inappropriate and essentially meaningless. RWQCB staff with appropriate expertise should evaluate the results of the Yolo County turbidity monitoring program and the

validity of continued turbidity monitoring within the Capay Valley and the lower Cache Creek basin. In addition, the RWQCB should delete the requirement for project proponents to "conduct monitoring programs that evaluate compliance with the turbidity objective, and submit monitoring results to the Regional Water Board (p. I-11).

Comment #7: Need more substantial evidence for definition of "elevated" mercury levels. As we have commented in earlier letters, the RWQCB does not present convincing reasoning for the definition of "elevated," yet this definition is the foundation of its regulatory program. It is our understanding that the RWQCB considers sediment to contain elevated levels of mercury if the particle size fraction of a sample that is finer (less) than 63 microns contains mercury at a concentration in excess of 0.4 mg/kg. This threshold apparently represents a doubling of a loosely defined "regional background concentration" of mercury discussed in Appendix D of the August 2005 staff report. The Amendments to the Basin Plan (page I-11) state:

"Sediment and soil in the depositional zone of creeks downstream of mines in the Cache Creek watershed is enriched in mercury. Erosion of the enriched sediment and soil due to controllable factors needs to be minimized to protect beneficial uses in Cache Creek and to reduce loads of mercury moving downstream to the Settling Basin and the Delta."

The staff report does not present data to establish the locations of "enriched" levels of mercury or depositional zones, however. The term "enriched" is not adequately discussed (e.g. in comparison to elevated) and the "depositional zone" is not clearly defined. Experts familiar with mercury levels in the sediment of Cache Creek believe that studies should be undertaken to determine the levels of mercury in the sediment and more realistically define "elevated mercury sediment" relative to this watershed prior to implementing regulations. The mercury levels are likely to be much lower than the RWQCB may expect, and will guide RWQCB efforts to prioritize remediation sites, as recommended earlier in these comments. The RWQCB, however, states that "erosion" of these undefined areas within the 10-year floodplain should be "minimized." This language essentially gives the RWQCB the authority to impose additional regulations on activities, such as farming, road maintenance, or habitat conservation, which may have very little impact on mercury levels in the creek.

Suggested revision: We understand that the RWQCB is planning to continue monitoring sediments in the Cache Creek watershed to identify areas with "elevated" levels of mercury. We recommend working with Yolo County and other affected entities to develop a study that will help provide a better, more justifiable definition of "elevated," as well as define the depositional zone. Yolo County may be willing to contribute funding to such a study.

Comment #8: Need information about naturally occurring mercury. As discussed earlier, the RWQCB should not regulate activities that disturb soil without sufficient evidence of the presence of "elevated" levels of mercury. The RWQCB cannot develop an understanding of "elevated" levels of mercury without better information about naturally occurring levels of mercury. The RWQCB's attempt to define background, or naturally occurring, levels is flawed for the following reasons:

- **Use of wide range of sampling and sample preparation techniques.** The RWQCB apparently attempts to define background levels of naturally

occurring mercury on the basis of the concentration of mercury in in-situ sediment in the vicinity of the Clear Lake Highland mining area and sediment samples taken from the upper Cache Creek watershed. The data presented in Appendix D of the staff report describe a wide range of sampling techniques and preparation of samples for analytical testing. In some cases, bulk sediment samples were analyzed for mercury while discrete grain size fractions were tested in other samples. This information does not provide a justifiable foundation for establishing naturally occurring levels of mercury.

- **Application of threshold to silt/clay fraction of samples.** The RWQCB uses the Churchill and Clinkenbeard report and Appendix D of the 2005 staff report to determine the background levels of mercury in sediment. The Churchill and Clinkenbeard report does not indicate that the samples are for the fine-grained fraction. Characterization of a chemical of concern is rarely applied to only a fraction of a sample, for many reasons. For one, referencing the standard to the fine fraction makes it impossible to compare samples to other background studies, such as Churchill and Clinkenbeard, relevant regional background studies conducted outside the study areas, or standard sediment analysis that may be available within the area. The threshold also cannot be compared to waste management standards or human and environmental risk thresholds (e.g. Preliminary Regulatory Goals of the USEPA).

Suggested revision: The RWQCB should provide an opinion, developed by authorized technical reviewers of the TMDL, on the basis and validity of the proposed definition of "elevated sediments," "enriched sediments," and "regional background concentrations" as used in the August 2005 staff report and Amendments to the Basin Plan.

Comment #9: Increased cost of sampling. Since the RWQCB has specified a threshold concentration of 0.4 mg/kg for the fine-grained fraction, the characterization of potentially regulated soils will require grain size separation prior to analysis – at least doubling the cost of sample analysis. As Yolo County has stated in previous comments, funds that we use to restore habitat, improve our parks, and control erosion on Cache Creek will be diverted for compliance with the mercury regulation. We do not believe that Yolo County should allocate limited funds to increased sampling of dubious value.

Suggested revision: Eliminate the 0.4 mg/kg definition of sediment "elevated" with mercury and instead focus on prioritizing areas with the highest level of mercury in the sediment.

Specific comments

Page I-2: Need to recognize that the costs are uncertain, as the RWQCB does not have expertise with estimating costs to local governments or other entities of the plans, monitoring, and remediation actions they may require.

Page I-2. Need to mention the adaptive management approach in the "Whereas" regarding scientific portions to indicate that the science is not necessarily complete for this type of program.

Page I-8: Per the above comments, the "Implementation Project" in Table IV-9 referred to as "Erosion Control from New Projects, 10-yr Floodplains" should be modified to show the Action as "Implement management practices for erosion control".

Page I-8: The "Implementation Project" in Table IV-9 referred to as "New Reservoirs, Ponds, and Wetlands" has an Action to "Submit plans to control methylmercury discharges." The location of the projects to which this applies should be clarified (i.e., within the 10-year flood plain). Additionally, the objective for "plans to control methylmercury discharges" should be clarified (i.e., this should clarify that the objective is to control discharges that would result in an increased methylmercury load in the creek).

Page I-9: Define feasibility study. Specify that landowners will not have to pay for feasibility studies because presence of mercury is the result of historic mining activities.

Page I-11: As stated many times in previous comments, please provide a map of the 10-year floodplain that is available in a GIS layer so it can be overlaid onto Yolo County's parcel maps. Yolo County knows of no map available that defines the 10-year floodplain, so the RWQCB must provide a map to avoid confusion regarding implementation in the future.

Page I-11: Specify a more practical approach for a project proponent to demonstrate that the project does not result in a net increase in erosion. Perhaps a photographic record that documents implementation of the erosion control plan could serve this purpose.

Page I-16: RWQCB staff have stated that they will not fine or otherwise penalize local entities for non-compliance with the fish tissue and water quality objectives because they recognize, as stated in the Amendments to the Basin Plan, that the objectives will take hundreds of years to meet. This needs to be clearly stated in the compliance section to avoid the misuse of the language by future RWQCB staff.